

GRAMENITSKIY, I.M.

56-4-43/52

AUTHOR:

GRAMENITSKIY, I.M., ZHDANOV, G.B., ZAMCHALOVA, Y.A., SHCHERBAKOVA, M.N.

TITLE:

Nuclear Interaction in a Photoemulsion at an Energy of 8.10^{13} eV.
(Yadernoye vsaimedeystviye v fotoemulsii pri energii 8.10^{13} eV.
Russian).

PERIODICAL:

Zhurnal Eksperim. i Teoret. fiziki, 1957, Vol 32, Nr 4, pp 936-938
(U.S.S.R.)

ABSTRACT:

In a stack of baseless 600 μ thick photoemulsion of the type ILFORD G5 (which in 1955 was exposed to light for 6 hours in the Po Valley (?) at a height of 25,5 km) a nuclear interaction of the type $1 + 37 \alpha$ was discovered. The angular distribution of secondary charged particles was measured, on which occasion the small angles θ were calculated from the center of the axial symmetry of the narrow cone of the particle. In order to be able to obtain the angular distribution of the penetrating particles immediately in the center of mass system of the colliding particles, the order $\ln \tan \theta$ was chosen as the angular variable. The differential angular distribution obtained after averaging over three independent measurements is represented in a diagram. The necessary condition for the determinability of the primary energy (resulting) from the angular distribution is the symmetry of this distribution in the center of mass system with respect to the angle $\theta = \pi/2$. An examination of the angular distribution found here by means of the so-called χ^2 -test confirms the symmetry of this

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Nuclear Interaction in a Photoemulsion at an Energy of $8 \cdot 10^{13}$ eV.
distribution with 90% accuracy.

Starting from the symmetry of the angular distribution, the authors obtained some, partly independent, possibilities of determination of the energy E_0 from the values of $\ln \operatorname{tg} \theta$ for each pair of particles which are symmetric with respect to the angle $\theta_{1/2}$.

Thus, they obtained for the energy of the primary particle in the center of mass system (E_0) and in the laboratory system the following values:

$$E_0 = (200^{+50}_{-40}) \text{MeV}^2, \quad E_{\text{lab}} = (8^{+4}_{-3} \cdot 10^{13} \text{ eV per nucleon}).$$

With a total length of path of 110 cm of the secondary particles in the photoemulsion three cases of secondary interactions were observed; their characteristics are shown together in a table. A further indirect method for the approximation-like measurement of the transversal momenta of the shower particles is the determination of the energies and the directions of flight of these photons which occur on the occasion of the decay of the neutral pions. The values of the transversal momenta measured by means of two independent methods sufficiently agree with one another and furnish

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56-4-43/52

Nuclear Interaction in a Photoemulsion at an Energy of $8 \cdot 10^{13}$ eV.
the average value \bar{p}_1 2.40 and a scattering of $\Delta \bar{p}_1 \sim \bar{p}_1$ around
the average value. (1 illustration and 2 tables).

ASSOCIATION: Physical Institute "P.N. LEBEDEV" of the Academy of Science of
the U.S.S.R.
PRESENTED BY:
SUBMITTED: January 12, 1957
AVAILABLE: Library of Congress

Card 3/3

GRAMENITSKIY, I.M.

AUTHOR: GRAMENITSKIY, I.M., ZHDANOV, G.B., TRETYAKOVA, M.I. 56-7-50/66
 SHCHERBAKOVA, M.N.
 TITLE: The Soft Component of an Electron Nuclear Shower at an Energy of
 10^{14} eV. (Myagkaya komponenta elektronno - yadernogo livnya
 pri energii poryadka 10^{14} eV)
 PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 33, Nr 7, pp 282-283
 (U.S.S.R.)
 ABSTRACT: The spatial and energy distribution of electron pairs and the
 spatial distribution of electrons are shown in form of tables. The
 spatial distribution of the particles of the soft components in
 the direction which is vertical to the axis of the shower in a
 distance of $t = 2$ can be represented by the function:
 $f(r) \sim r^{-1.62 \pm 0.05}$, $r = t^2$. (With 2 Tables, 1 Illustration
 and 2 Slavic References).
 ASSOCIATION: Physical Institute "P.N. LEBEDEV" of the Academy of Sciences of the
 U.S.S.R.) (Fizicheskiy institut im. P.N. Lebedeva Akademii nauk
 SSSR)
 PRESENTED BY:
 SUBMITTED: 2.4.1957
 AVAILABLE: Library of Congress
 Card 1/1

GRAMENITSKIY I. M.

89-3-7/30

AUTHORS: Bogachev, N. P. , Van Shu-Fen', Gramenitskiy, I. M. ,
Kirillova, L. F. , Lebedev, R. M. , Lyubimov, V. B. ,
Markov, P. K. , Merekov, Yu. P. , Podgoretskiy, M. I. ,
Sidorov, V. M. , Tolstov, K. D. , Shafranov, M. G.

TITLE: The Interaction of 9 Bev Protons With Nuclei in Photo-Emulsion
(Vzaimodeystviye protonov s energiyey 9 Bev s yadrami foto-emul'sii)

PERIODICAL: Atomnaya Energiya, 1958, Vol. 4, Nr 3, pp. 281 - 284 (USSR)

ABSTRACT: The photoemulsion HMKФИ -P with a layer of about 450 μ was irradiated with protons within and out of the vacuum chamber of the 9 Bev synchrophasotron. The mean range of 9 Bev protons for an interaction is $34,7 \pm 1,5$ cm. (The scattering for angles below 5° was not taken into account). 258 cases of a nuclear interaction were observed. The mean number of fast particles n generated in a process of interaction amounts to $3,4 \pm 0,9$. The angular distribution of these particles shows a clearly preferred forward motion. The mean number of black and grey traces \bar{N}_n - the recoil nuclei

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89-3-7/30

The Interaction of 9 Bev Protons With Nuclei in Photo-Emulsion

not being considered - is $8,3 \pm 0,5$.

From 249 found stars 18 can be considered to constitute an interaction of the initial protons with "free" or "quasi-free" protons.

13 stars can be considered to represent an interaction between protons and "quasifree" neutrons. All of them have an odd number of traces, and in the point of formation of the star β -traces can be observed. The mean number of fast particles in these 13 star traces is $3,1 \pm 0,3$. There are 5 figures, 1 table, and 7 references, 1 of which is Slavic.

SUBMITTED: December 16, 1957

AVAILABLE: Library of Congress

1. Photoemulsions-Proton irradiation
2. Vacuum chambers-Applications
3. Particles-Distribution

Card 2/2

21(7)

AUTHORS:

SOV/56-35-2-56/60

Gramenitskiy, I. M., Danysh, M. Ya., Lyubimov, V. B.,
Podgoretskiy, M. I., Tuvdendorzh, D.

TITLE:

Concerning the Problem of the Angular Correlation Between the
Secondary Particles Which Are Generated in Nuclear Collisions
of High Energy (K voprosu ob uglovoy korrelyatsii mezhd
vtorichnymi chastitsami, obrazuyushchimisya v yadernykh
stolknoveniyakh vysokoy energii)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958,
Vol 35, Nr 2(8), pp 552-553 (USSR)

ABSTRACT:

The above-mentioned relativistic particles were generated by
the interaction of protons (~ 9 BeV) with the nuclei of the
photoemulsion. The authors measured the coefficient of the
correlation between the number of the particles which fly
away at different spatial angles. For the correlation co-
efficient $R = n_1 n_2 - \bar{n}_1 \bar{n}_2$ the expression $R = p_1 p_2 (D_n - \bar{n})$
may be obtained. n_1 and n_2 denote the numbers of the secondary
relativistic particles in any separate star the emission
directions of which are within the spatial angles Ω_1 and Ω_2 .

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Concerning the Problem of the Angular Correlation Between the Secondary
Particles Which Are Generated in Nuclear Collisions of High Energy

\bar{n} denotes the average number of the particle in the star and D_n - the dispersion of the particle number. In order to measure the value of R , the authors used 450 nuclear spallations which were found by examination of an emulsion chamber consisting of emulsions NIKFI - «R» with a density of 400 μ . This chamber was irradiated by the internal beam of the synchrophasotron of the Ob'yedinennyy institut yadernykh issledovaniy (United Institute of Nuclear Research). The investigation was carried out along the tracks made by the primary protons. For \bar{D}_n and \bar{n} the values 3.64 ± 0.15 and 3.23 ± 0.09 respectively, were found. Further investigations are based on the measurement of the quantity $Q = \bar{R} - p_1 p_2 (D_n - \bar{n})$ for different values of the angles Ω_1 and Ω_2 . The results of these measurements are given in a table. According to these results, there is no total statistical independence between the emission directions of the secondary particles. 6 "narrow pairs" (uzkaya para) were found by the analysis of 375 spallations. The investigation of the correlations in the direc-

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Concerning the Problem of the Angular Correlation Between the Secondary
Particles Which Are Generated in Nuclear Collisions of High Energy

tions of emission of the secondary particles may be useful for the verification of the statistical theory of the multiple production of pairs. For this purpose, it is essential to investigate the elementary collisions of nucleons and pions with nucleons. Moreover, it is necessary to take into account the possible existence of angular correlations which are connected with the conservation laws. The authors thank E. V. Yesin, T. V. Pokidov, L. I. Fedorov and M. I. Filippov for their participation in carrying out measurements and D. S. Chernavskiy for his discussion of the results of this paper. There are 1 figure and 4 references, 2 of which are Soviet.

ASSOCIATION: Ob"yedinenny institut yadernykh issledovaniy
(United Institute for Nuclear Research)

SUBMITTED: May 31, 1958

Card 3/3

21(7)

SOV/56-36-3-6/71

AUTHORS: Bayatyan, G. L., Gramenitskiy, I. M., Homofilov, A. A.,
Podgoretskiy, M. I., Skzhipchak, E. S.

TITLE: The Production of π^0 -Mesons in the Interaction Between Protons
With Energies of ~ 9 BeV and Photoemulsion Nuclei (Generatsiya
 π^0 -mezonov pri vzaimodeystviyakh protonov s energiyey ~ 9 BeV
s yadrami fotoemul'sii)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,
Vol 36, Nr 3, pp 690-693 (USSR)

ABSTRACT: For the purpose of solving the problem of the interaction of
high-energy particles, it is of interest to know the energy
portion k carried off by secondary π -mesons. Grigorov and
Murzin (Ref 1) determined k as amounting to $\sim 30\%$ for inter-
action between cosmic particles ($E \sim 10^{10}$ ev) and light nuclei.
The present paper deals with investigations of the average
energy of π^0 -mesons produced by ~ 9 BeV protons on photo-
emulsion nuclei. NIKFI emulsions of the type R (450 μ) were
used. Proton irradiation was carried out on the synchrophaso-
tron of the OIYaI. Investigation was indirect; the electron-
positron pairs were investigated which had been produced by
the γ -quanta originating from π^0 -decay. For $R = n_{\pi^0}/n_s$ an

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SOV/56-36-3-6/71

The Production of π^0 -Mesons in the Interaction Between Protons With Energies of ~ 9 Bev and Photoemulsion Nuclei

estimate is $R \sim 0.5$. Figure 1 shows the measured distribution of the angles of emission of electron-positron pairs, of the fast charged particles of stars, found by prolonging the traces of primary protons and of stars, found by following the fast secondary particles. For n_s' and N_h 4.3 ± 0.2 and 7.8 ± 0.7 is obtained, which agrees well with the values of reference 4. The mean energy of π^0 -mesons is determined from $f = \bar{E}_{\pi^0} / \bar{E}_\gamma$, for $f = 1.8$ $\bar{E}_{\pi^0} = 750 \pm 180$ Mev is obtained. The mean energy generated by a π -meson, according to $\bar{E}_\pi = 3/2 \cdot (n_s - \alpha) \bar{E}_{\pi^0}$, becomes $\bar{E}_\pi = 3.0 \pm 0.7$; a more exact estimate gives 2.5 ± 0.6 . The energy portion k carried off by π -mesons therefore amounts to $0.33 \pm 0.08 \leq k \leq 0.27 \pm 0.07$. In conclusion, the authors thank M. Ya. Danysh for discussing results, and V. P. Solomakhina for assisting in the work of evaluation. There are 2 figures and 8 references, 5 of which are Soviet.

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy
(Joint Institute for Nuclear Research)

SUBMITTED: July 28, 1958
Card 2/2

84391

S/056/60/039/004/009/048
B004/B070

24.6900

AUTHORS:

Van Shu-fen', Vishki, T., Gramenitskiy, I. M., Grishin,
V. G., Dalkhazhav, N., Lebedev, R. M., Nomofilov, A. A.,
Podgoretskiy, M. I., Strel'tsov, V. N.

TITLE:

Inelastic Interactions of 9 Bev Protons With Nucleons

PERIODICAL:

¹⁹ Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
Vol. 39, No. 4(10), pp. 957-960

TEXT: In an earlier work (Ref. 1), the authors carried out the identification of particles and the measurement of their energies only for slow particles. In the present work, the study of pp and pn interactions is continued under conditions permitting the measurement of multiple scattering of fast particles. An НИКФИ-Р (NIKFI-R) emulsion pile was irradiated by 9-Bev protons from the proton-synchrotron of the authors' institute. The inelastic pp (161 events) and pn (94 events) interactions were selected according to the criterion described in Ref. 1. The average number of charged particles in pp interactions was 3.25 ± 0.10

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Inelastic Interactions of 9 Bev Protons
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B004/B070

and in pn interactions 2.58 ± 0.14 . The identification was made according to Ref. 3 by means of the function $g/g_0 = f(p\beta)$ for pions and protons. The identification was not certain in the range $(1.5 \leq p\beta \leq 2.5 \text{ Bev/c})$ where the curves for protons and pions intersected one another (Table 1). The angular distribution of the secondary protons (in c.m.s.) from pp interactions was strongly anisotropic; the same was true for the pions (Fig. 2). The momentum distribution is shown only for the protons emitted backwards (Fig. 3), because due to spurious scattering only the lower limit of $p\beta$ could be determined for forward emission. Fig. 4 gives the angular distribution of protons in pn interactions. Since there is no difference in the values of angular distribution and energy for pp and pn interactions, the authors treat the two together for higher statistical accuracy. The values of \bar{p} , \bar{p}_1 , and $\bar{\theta}$ for protons and pions are given in Table 2 for lower ($n = 2, 3, 4$) and higher ($n = 5, 6, 7$) multiplicities. The values of $\alpha = \sqrt{p_1^2/2}$ for the lower and higher multiplicities are given in Table 3. The data show that the character of the interaction is only slightly affected by the number of the secondary charged particles.

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Inelastic Interactions of 9 Bev Protons
With Nucleons

S/056/60/079/004/009/048
B004/B070

The authors thank D. I. Blokhintsev and V. I. Veksler for discussions.
There are 4 figures, 3 tables, and 7 references: 6 Soviet and 1 US.

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint
Institute of Nuclear Research)

SUBMITTED: May 12, 1960

X

Card 3/3

S/120/61/000/001/011/062
E032/E114

AUTHORS: Gramenitskiy, I.M., Korbel, Z., and Rob, L.

TITLE: Determination of the Sign of Particles Recorded in an Emulsion

PERIODICAL: Pribery i tekhnika eksperimenta, 1961, No.1, pp.42-44

TEXT: A stack of emulsions was placed in the internal proton beam of the 9 GeV synchrophasotron. The magnetic field at the stack was about 1.2 koersted, and a measurement was made of the deflection of the secondary charged particles by the magnetic field. The ratio of the change in the direction of a track due to the magnetic field Θ_M and due to multiple scattering Θ_K is given by:

$$\Theta_M / \Theta_K = 3.5 \times 10^{-5} H \beta \sqrt{t}$$

where H is the magnetic field in koersted, t is the distance in cm, and β is the ratio of the velocity of the particle to the velocity of light. For large energies ($\beta \rightarrow 1$) the ratio is a function of H and t only. A reliable determination of the sign
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S/120/61/000/001/011/062
EO32/E114

Determination of the Sign of Particles Recorded in an Emulsion
of the particles can be made when $O_M/\bar{O}_K \gg 1$. However, this requires fields of a few tens of koe and track lengths of some tens of cms. However, it is often sufficient to consider the statistical distribution of the particles over the signs. It is then sufficient to use much smaller track lengths and to determine the distribution of the quantity

$$\gamma = O_M/\bar{O}_K \sqrt{t}$$

C.C. Dilworth et al. (Ref.2) and C.C. Dilworth et al. (Ref.3) have determined the signs of charged particles, using emulsions placed in a magnetic field of 34 koe. They have measured the angles O_i for successive cells over a total length t , and calculated the quantity

$$\gamma = \sum O_i / \sum \bar{O}_i \sqrt{t}$$

Their results show that this method can be used to determine the signs of charged particles. However, the present authors point
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S/120/61/000/001/011/062
E032/E114

Determination of the Sign of Particles Recorded in an Emulsion

out that the above method is sensitive to C-distortions which may imitate magneyc deflections. In the case of an emulsion irradiated with a well-collimated beam of high-energy particles, the effect of the distortions may be minimised by measuring the angles θ_M of secondary particles relative to the beam axis, as indicated by V.I. Veksler. The present authors have used a stack of НИКФ-Р (NIKFI-R) emulsions containing $10 \times 20 \times 0.04 \text{ cm}^3$ plates. Secondary tracks produced on interaction between the primary protons and the emulsion nuclei were selected subject to the following conditions: a) the dip angle must be less than 4° , b) the magnitude of $p\beta$ as estimated from multiple scattering must be of the order of 1-2 GeV/c, and c) the angle between the primary track and the secondary track in the plane of the emulsion must be less than 30° . 20 secondary tracks were measured (total length $155 \times 3 \text{ cm}$). It was found that statistical determination of the signs of the particles was possible with $t \sim 6-10 \text{ cm}$. The following results were obtained: $|\gamma| = 0.45 \pm 0.04$, $\gamma_+ = +0.46 \pm 0.04$, and $\gamma_- = -0.44 \pm 0.08$.

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S/120/61/000/001/011/062
E032/E114

Determination of the Sign of Particles Recorded in an Emulsion
The theoretical values of these quantities (including multiple scattering effects) are 0.47, +0.48 and -0.45 respectively. With fields higher by a factor of 5, momenta of fast particles could also be determined.

Acknowledgements are expressed to M.Ya. Danysh, V.B. Lyubimov, M.I. Podgoretskiy for valuable advice, and to A.I. Maklachkova for taking part in the measurements.

There are 2 figures and 3 references: 1 Soviet and 2 non-Soviet.

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy
(Joint Institute of Nuclear Research)

SUBMITTED: January 6, 1960

Card 4/4

GRAMENITSKIY, I.M.; DREMIN, I.M.; MAKSIMENKO, V.M.; CHERNAVSKIY, D.S.

Nucleon-nucleon interaction at 9 Bev. Zhur. eksp. i teor. fiz.
40 no.4:1093-1100 Ap '61. (MIRA 14:7)

1. Fizicheskiy institut imeni P.N. Lebedeva AN SSSR.
(Nuclear reactions) (Nucleons)

GRAMENITSKIY, I. M., IVANOVSKAYA, I. A., KANAREK, T., MARTINOV, A. S., OKHRIMENKO, L. S.,
PROKESH, A., TIKHONOVA, L. A.

"Cross-Section of the Gereration of π^- -Mesons in the Coulomb Field
of the Xenon Nucleus at the Momentum of Primary π^- -Mesons 9 GeV/c"

report presented at the Intl. Conference on High Energy Physics, Geneva,
4-11 July 1962

Joint Inst. for Nuclear Research
Lab. of High Energies, Dubna, 1962

GRAMENITSKIY, I. M., IVANOVSKAYA, I. A., KANAREK, T., MARTINOV, A. S.,
OKHRIMENKO, L. S., PROKESH, A., STRUGALSKIY, S. S., TIKHONOVA, L. A. and CHUVILO, I. V.

"Neutral Strange Particles Production on Xenon Nuclei in the 9 GeV/c π^-
Meson Beam"

report presented at the Intl. Conference on High Energy Physics, Geneva,
4-11 July 1962

Joint Institute for Nuclear Research
Laboratory of High Energies

ACCESSION NR: AP4042562

S/0056/64/046/006/2023/2027

AUTHORS: Gramenitskiy, I. M.; Ivanovskaya, I. A.; Kanarek, T.;
Okhrimenko, L. S.; Prokesh, A.; Tikhonova, L. A.

TITLE: Investigation of the reaction $\pi^- + \text{Xe} \rightarrow \pi^- + \pi^0 + \text{Xe}$ for
9 GeV/c primary negative pions

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 6, 1964, 2023-2027

TOPIC TAGS: pion, pion interaction, pi meson product, negative pi
meson, neutral pi meson, xenon, Coulomb field

ABSTRACT: The production of negative and neutral pions in the inter-
action between negative pions and nuclei, with small momentum trans-
fer to the recoil nucleus, was investigated in a xenon bubble chamber.
The greatest interest in these reactions lies in the process of pro-
ducing a neutral pion in a Coulomb field, for this reaction can yield
information on the interaction between pions and gamma rays. The se-

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ACCESSION NR: AP4042562

lection criteria and the measurement procedures and the data reduction procedure are described in detail. An upper limit of 1.0 ± 0.2 mb is estimated for the cross section for production of neutral pions in the Coulomb field of the xenon nucleus. This estimate does not agree with results by others and possible reasons for the discrepancy are suggested. "The authors are grateful to Ye. V. Kuznetsov for calling their attention to the topic, to M. I. Podgoretskiy and A. S. Martyanov for helpful discussion, and to the staff of technicians that took part in the scanning and measurement." Orig. art. has: 3 figures and 4 formulas.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: 19Jan64

DATE ACQ:

ENCL: 00

SUB CODE: NP

NR REF SOV: 003

OTHER: 003

Card 2/2

L 2120.65 EWT(m) DIAAP/AFWL/SSD/ESD(t)
ACCESSION NR: AP4046389

S/0056/64/047/003/0801/0805

AUTHORS: Gramenitskiy, I. M.; Okhrimenko, L. S.; Slovinskiy, B.; Strugal'skiy, Z. S. 18 //

TITLE: Estimate of the cross section for the charge exchange of negative pions on quasi-free protons at 9 GeV/c 19

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 3, 1964, 801-805

TOPIC TAGS: charge exchange, pion proton scattering, exchange cross section, elastic scattering, bubble chamber

ABSTRACT: In view of the scarcity of data on the exchange scattering of negative pions by protons in the energy region of several GeV, the authors investigated the exchange scattering of 9 GeV/c negative pions by quasi-free protons in a xenon bubble chamber, with an aim at investigating the charge-exchange reaction

Cord 1/3

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ACCESSION NR: AP4046389

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lova and G. Stroykova for help with the work." Orig. art. has: 3 figures, 4 formulas, and 1 table.

ASSOCIATION: Ob"yedinenny*y institut yaderny*kh issledovaniy
(Joint Institute of Nuclear Research)

SUBMITTED: 21Mar64

ENCL: 00

SUB CODE: NP

NR REF SOV: 007

OTHER: 008

Card 3/3

GRAMENITSKIY, I.M.; MAKSIMENKO, V.M.; MIKHIN, A.I.

Ninth International Conference on High-energy Physics. Usp.
fiz. nauk 83 no. 1:183-190 My '64. (MIRA 17:6)

L 20208-65 EWT(m)/EPA(w)-2/EWA(m)-2 Pb-4/Pab-10 IJP(c)/AFWL/
SSD/BSD/ASD(a)-5/AFMDC/AFETR/ESD(t)
ACCESSION NR: AP4038551 S/0053/64/083/001/0183/0190

AUTHOR: Gramenitskiy, I. M.; Maksimenko, V. M.; Mukhin, A. I. *B*

TITLE: Ninth international conference on high energy physics

SOURCE: Uspekhi fizicheskikh nauk, v. 83, no. 1, 1964, 133-190

TOPIC TAGS: cosmic ray, high energy particle, pion, muon, muon capture, nucleon interaction, K meson

ABSTRACT: The Ninth international conference of Soviet-block experts on high-energy physics¹⁴ was held in Krakow, Poland on 24--26 September 1963 and was devoted essentially to interactions of nucleons and nuclei with particles of energies ranging from several to several hundred GeV. Three sessions were devoted to accelerator results, two to cosmic ray results, one to methods, and one to individual problems in the theory of high-energy particle interactions. It was attended by 111 scientists (Acad. Sci. SSSR - 9, Joint Inst. of Nuc. Res. - 10, Bulgaria - 4, Hungary - 5, DDR - 9, China - 2, Poland - 60, Rumania - 6, and Czechoslovakia - 6). The conference was opened by Prof. M. Miesowicz, followed by a large survey paper by Ye. L. Feynberg (see

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ACCESSION NR: AP4038 551

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Ye. L. Feynberg and D. I. Chernavskiy, UFN v. 82 (1), 3, 1964). The reported papers are: G. I. Budker (Novosibirsk) - on the small high-current accelerator. A. I. Mukhin (Dubna) - muon capture by nuclei. Yu. M. Kazarinov (Dubna) - phase shift analysis of NN scattering. V. S. Yevseyev et al. - capture of polarized μ mesons by Ca^{40} . O. A. Zaymioroga et al. - nuclear capture of muons in He^3 . Yu. M. Kazarinov et al. - elastic NN interaction below 1 GeV. I. Suchrzewska, Gajewski, and E. Zakrzewski (Warsaw) - several communications on fragmentation of hyperfragments. T. Visky (Bucharest) - production of subbarrier positive pions. T. Hofmoki (Warsaw) - interaction of 3.0 GeV/c antiprotons with protons. K. Lanmus (Berlin) - π^+p interaction at 4.0 GeV/c. M. Bardadin (Warsaw) - π^-p interactions with n_6 charged particles at 9.9 GeV/c. A. Eskrajs (Krakow) - secondary stars of neutrons in hydrogen bubble chamber bombarded by 10.6-GeV/c π^+ mesons. I. Vrana (Prague) - π^-N interaction at 7 GeV. I. Klugow (Berlin) - neutral pion production in π^-N interactions. A. Mihul (Bucharest) - π^-p reaction at low momentum transfer. E. Balia (Bucha-

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ACCESSION NR: AP4038551

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rest) - analysis of π^-p interaction at 7 GeV. E. Loskiewicz (Krakow) - production of neutral pions in xenon bubble chamber by 9 GeV/c π^- mesons. I. M. Gramenitskiy (Dubna) - generation of neutral pions by negative pions in the Coulomb field of the xenon nucleus; scattering of negative pions by quasi-free neutrons and charge exchange of negative pions by quasi-free protons. R. Sosnowski (Warsaw) - production of strange particles in πp interactions. E. Rytka (Krakow) - strange particle production by 16 GeV/c negative pions. E. M. Moroz (LVE, Dubna) - possible system of isobar states and their transition schemes. E. Skrzypczak (Warsaw) - interaction between 24 GeV protons and 17 GeV pions. Prof. M. Miesowicz, Prof. E. Gierula, S. Krzywdziński, and K. Zaleski (Krakow) - several reports on nuclear interactions in emulsions exposed on balloons at high altitudes. V. M. Maksimenko (report of FIAN group headed by N. A. Dobrotin) - momentum spectrum of secondary pions generated in interactions with average energy 220 GeV. S. A. Slavatskiy and I. N. Fetisov (same FIAN group) - upper limit of K^0 meson and hyperon production in interactions with nucleons of average energy 300 GeV. V. Ya. Shestoporov (report of group headed by N. L. Grigorov, Moscow, MGU) - inelastic

Card 3/4

L 20208-65

ACCESSION NR: AP4038551

8

interactions between nucleons and nuclei at $\bar{x} 10^{12} - 10^{13}$ eV. Yu. A. Smorodin et al. (Moscow, FIAN) - results of production of electron-photon cascades in air at $5 \times 10^{10} - 10^{13}$ eV. N. M. Nesterova (group headed by A. Ye. Chudakov, Moscow, FIAN) - primary cosmic radiation and search for high-energy photons. A. Zawadski (Lodz) - same but different procedure. B. A. Khrenko (Lodz) - same but different procedure. I. A. and I. I. Nikol'skii - calculation of primary cosmic radiation composition from fluctuations of the relative intensity of the Cerenkov flash due to an extensive air shower with specified particle number. Orig. art. has 1 figure, 12 formulas, and 2 tables.

ASSOCIATION: None

SUBMITTED: 00

ENCL: 00

SUB CODE: NP

NR REF SOV: 001

OTHER: 000

Card 4/4

GRAMENITSKIY, I.M.; SAVICH, A.A.; YUROVA, K.S.

Effect of various intravenously introduced gases on the organism.
Funk. org. v usl. izm. gaz. sredy 3:53-59 '64. (MIRA 17:11)

1001-65 EWT(m) Peb DIAAP
 NR: AP5007712

5/0367/65/001/001/0113/0121

I. M. Kharin, T. Mal'nev, V. M. Prokesh, A. Tikhonov

Quasi-elastic π^+ -n interactions at 9 GeV

Yadernaya fizika, v. 1, no. 1, 1965, 113-121

quasielastic scattering differential pion nucleon scattering, optical coefficient, pion neutron background scattering, π meson nucleon interaction, backward scattering

Quasi-elastic π^+ -n scattering at the π^+ -meson momentum of 9 GeV/c was studied in a xenon bubble chamber where quasi-elastic means elastic scattering with a small angle of deflection. The ratio of the quasi-elastic section to the total section is equal to the ratio of the quasi-elastic to the total cross section.

A. Love, S. Ozaki, J. J. Russell

Cord 1/2

L 41017-65

ACCESSION NR: AP5007712

The optical characteristics of the neutron were determined as follows:
 at $\lambda = 0.010-15$ cm, the absorption coefficient $\mu = 0.08 \cdot 10^{13}$ cm⁻¹.
 The total cross section σ_{tot} and the scattering cross section σ_{scat} were estimated
 as $\sigma_{\text{tot}} = 0.020$ mb. The authors thank A. Mirolyutov, A. Mirolyutov,
 A. Chakmanov for the valuable assistance in the experiments. N. P. Markov
 helped in the preparation of the manuscript. The authors are grateful to
 the staff of the Institute for the help in the preparation of the manuscript.

and 1 Table.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute for
 Nuclear Research)

SUBMITTED: 25Ju164

ENCL: 00

SUB CODE: NP

NO REF SOV: 003

OTHER: 007

Card 2/2

GRAMENITSKIY, I.M.; DREMIN, I.M.; CHERNAVSKIY, D.S.

Note on π -p-interaction at an energy of 7 Bev. Zhur.eksp.i
teor.fiz. 41 no.3:856-860 S '61. (MIRA 14:10)

1. Fizicheskiy institut im. P.N.Lebedeva AN SSSR i Ob'yedinennyy
institut yadernykh issledovaniy.
(Moscow)

VISHKI, T.; GRAMENITSKIY, I.M.; KORBEL, Z.; NOMOFILOV, A.A.; PODGORETSKIY,
M.I.; ROB, L.; STREL'THOV, V.N.; TUVDENDORZH, D.; KHVASTUNOV, M.S.

Inelastic interactions between protons and nucleons at an energy
of 9 Bev. Zhur.eksp.i teor.fiz. 41 no.4:1069-1075 0 '61.
(MIRA 14:10)

1. Ob'yedinennyy institut yadernykh issledovaniy.
(Protons) (Nucleons)

GINZBURG, V.L.; GRAMENITSKIY, I.N.; KASHLINSKAYA, S.Ye.; LIVSHITS, D.M.

Spectrographic determination of minor impurities in a few raw materials, semi-finished products and pure metals in copper and nickel production. Izv. AN SSSR, Ser. fiz. 19 no. 2: 211-216
Mr-Apr '55. (MLRA 9:1)

(Tartu--Spectrum analysis--Congresses)

"APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000516520009-3

GRAMENITSKIY, V.N.

APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000516520009-3"

GRAMENITSKIY, I.N.

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 16, p 136 (USSR)
SOV/BI-59-16-56920

AUTHORS: Belokrinit'skaya, Ye.Ye., Bondarenko, V.V., Vitushkina, I.N., Orastova,
M.S., Ginstberg, V.L., Gramenitskiy, I.N., Livshits, D.M., Kryzhnaya, V.V.

TITLE: The Spectral Analysis of Cobalt for Metallic Impurities with the Use of
Cast Electrodes

PERIODICAL: V sb.: Materialy 1-go Ural'skogo soveshchaniya po spektroskopii, 1956,
Sverdlovsk, Metallurgizdat, 1958, pp 59-61

ABSTRACT: The samples are cast into chill molds in the form of rods of 7 mm in dia-
meter and 40 mm long. The butts of the rods are filed to a plane and
treated by a HCl solution (1 : 1) for cleaning from Fe. The spectra are
excited in an a-c arc with an upper carbon electrode and photographed with
an average quartz spectrograph. The standards are prepared on the basis
of pure cobalt, in which the concentration of admixtures is determined
chemically. Ni, Fe, Si, Mn, Al, Cu, As and Sb can be determined with a
mean error of 5 - 15%.

Card 1/1

G. Kiblaov.

.USSR / Human and Animal Physiology. Respiration.

T

Abs Jour : Ref Zhur - Biol., No 15, 1958, No. 70235

Author : Botvinnikov, B. A.; Ginzburg, I. Sh.; Gramenitskiy, P. M.;
Ivanov, G. I.; Ivchenko, O. I.; Libin, Yu. M.; Rudnyy, N. M.;
Salmanov, L. P.; Fol'dman, L. A.; Froyzan, G. N.

Inst : Academy of Sciences USSR

Title : The Influence of Elevated Intrapulmonary Pressure on
Respiration and Circulation

Orig Pub : In the collection, Funktsii organizma v usloviyakh izmen-
onnoy gazovoy sredy, Moscow-Leningrad, AN SSSR, 1955, No 1,
118-160

Abstract : The experimental arrangement permitted elevating the
pressure on inspiration and expiration either separately
or conjointly. In acute and chronic experiments on dogs,
recordings were made of the thoracic and abdominal
breathing, of the pressures in the intervalvular space

Card 1/3

USSR / Human and Animal Physiology. Respiration.

T

Abs Jour : Ref Zhur - Biol., No 15, 1958, No. 70235

(in the respiratory tract) and in the abdominal cavity, and also of ventilation and of arterial and venous blood pressures. Upon elevation of the pressure during expiration, there was a considerable distention of the thoracic cage and abdomen and a diminution in pulmonary ventilation due to sharp reduction in respiratory rate; there was an acceleration in the onset of, and a diminution in the depth of, inspiration, with prolongation of the expiratory phase; there was also a reduction in the average level of arterial pressure, an increase in its respiratory fluctuations, a slowing of the heart rate, and the appearance of arrhythmias. With elevated pressure in both expiration and inspiration, phenomena similar to those described above progressed to the point of apnea. The degree and character of the changes of respiration depend on the ratio of the increased pressures in expiration and inspiration.

Card 2/3

AVER'YANOV, V.A.; GRAMENITSKIY, P.M.; SAVICH, A.A. (Leningrad)

Changes in the value of maximum permissible oversaturation of the body with nitrogen in multiple repeated experiments. Pat. fiziol. i eksp. terap. 5 no.4:50-53 J1-Ag '61. (MIRA 14:9)

1. Iz Voenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova i Instituta evolyutsionnoy fiziologii imeni I.M.Sechenova (dir. - chlen-korrespondent AN SSSR prof. A.G.Ginetsinskiy).
(DECOMPRESSION SICKNESS) (NITROGEN IN THE BODY)

REF ID: A67089

1-40274-65 EPF(c)/EPF(n)-2/EPR/EWG(a)-2/EW3(c)/EWG(j)/EWG(r)/EWG(v)/EWT(1)/
EWG(w)/EWG(x)/EWG(y)/EWG(z) PHOTOCOPYED FROM EWT(1) AFFIDAVIT/ESD
1-40274-65 EPF(c)/EPF(n)-2/EPR/EWG(a)-2/EW3(c)/EWG(j)/EWG(r)/EWG(v)/EWT(1)/
EWG(w)/EWG(x)/EWG(y)/EWG(z)

AUTHOR: Brestkin, A. P.; Gramenitskiy, P. M.; Sidorov, N. Ya.

TITLE: Investigation of the safe supersaturation of the organism by inert gases
under different pressures

SOURCE: AN SSSR, Institut evolyutsionnoy fiziologii. Funktsii organizma v usloviyakh izmenennoy gazovoy sredy, v. 3, 1964, 16-24

TOPIC TAGS: respiration, decompression, respiration supersaturation, inert gas, nitrogen

ABSTRACT: In studying the mechanism of development, and particularly the problems of decompression disruptions, it is important to determine that saturation point by inert gasses which leads to the first symptoms of the type of disruption. In experimentally determining the level of a given saturation point and assaying its quantitative characteristics, it is necessary to consider the specific nature of super-saturation and so-called "gas embolism" - the formation of gas bubbles in the blood, especially in the organism.

Card 1/3

L 42174-65

ADDITION NR: AT5010593

The authors studied 5 dogs and 6 cats. Each animal was initially ex-

posed to rapid decompression to normal pressure. The pressure for the subsequent test was increased by 0.2 atm. That pressure of nitrogen did not produce decompression symptoms was used as a measure of the tolerance of the animal to this factor.

general discoordination.

Results of the experiment indicate that the coefficient of safe super-

pressure should not be considered as constant for different situations.

L 42174-65

ACCESSION NR: AT5010593

curately determined as a function of the relationship between the pressure of the inert gas and the surrounding pressure following decompression rather than as a function of the difference between these two values. The conception that the limit is constant is incorrect, since when the pressure of a dissolved inert gas is increased, the value for the limit is also sharply increased. Conversely, when the pressure of a dissolved inert gas is increased, the coefficient of safe supersaturation decreases, a relationship which is in agreement with the results of other investigations. orig. art. has 2 formulas and 2 tables.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: PH, LS

NO REF SOV: 009

OTHER: 004

ATD PRESS: 3240-F

Card

3/3

L 45891-65 - EWG(j)/EWG(r)/EWI(1)/FS(r)-3/EWG(r)/EWG(a)-2/EWG(c) - Pb-4/Pc-5
 ACCESSION NR: AT5010596 AFFTC/AFMDC/ UR/3147/64/003/000/0035/0042
 AMD/APGC DD 42

AUTHOR: Gramenitskiy, P. M.; Savich, A. A. B+1

TITLE: Provoking bends in animals exposed to increased pressures by subsequently exposing them to simulated high altitude

SOURCE: AN SSSR. Institut evolyutsionnoy fiziologii. Funktsii organizma v usloviyakh izmenennoy gazovoy sredy, v. 3, 1964, 35-42

TOPIC TAGS: bends, decompression sickness, pressure chamber, dog, aeroembolism, respiration

ABSTRACT: Experiments were conducted with 9 dogs on which determinations of the coefficient of permissible supersaturation had been previously made. After exercise, the unfed dogs were exposed to pressure in a chamber for 4 hr. Each dog was exposed to a pressure known to be less than that which would produce decompression symptoms. These values varied from 1.2 to 2.6 atm in various experiments. After a 4-hr exposure, the dogs were rapidly decompressed (50--80 sec) to normal pressure and immediately examined. After 15 min to 1 hr 45 min, the dogs were exposed to rarefied atmospheres corresponding to 4.5 km, at

I 45801-65

ACCESSION NR: AT5010596

a rate of 1 km/30 sec. Investigators either remained in the chambers with the dogs or observed them through a panel from the outside. When decompression symptoms such as lameness and raised paws occurred, the dogs immediately returned to normal conditions. If no symptoms occurred, they remained at a simulated 4.5 km for 10 min. The investigators were particularly careful to note the onset, nature, and duration of symptoms, and in some cases cameras were used.

Atmospheric rarefaction following decompression from safe increased pressures always produced symptoms of bends. The symptoms were dual in nature. In some cases bends developed as soon as rarefaction began. In other cases, bends did not occur until sometime after peak rarefaction had been reached. Exposure to known safe pressures - at which no gas bubbles are formed in the organism which will persist for long periods of time but will not cause any functional disruption. These bubbles are potential inducers of the symptoms and general inhibition associated with decompression sickness. In some cases bends occur even in situations where no gas bubbles are formed, but lead to the development of extremely severe symptoms. The method of inducing bends by atmospheric rarefaction is the

Card 2/3

L 44891-65

ACCESSION NR: AT5010596

cause of minute air bubbles in the organism and its saturation by nitrogen.
It has future experimental and practical possibilities.
Orig. art. has 4 figures and 2 tables.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: PH, LS

NO REF SOV: 003

OTHER: 001

ATD PRESS: 3240-F

Card 3/3

EWG(j)/EWG(r)/EWT(1)/FS(v)-3/EWG(v)/EWG(a)-2/2000
 Pe-5 AFFTC/AFMDC/AMD/APGC DD UR/3147/64/003/000/0043/0052
 36
 2+1

ACCESSION NR: AT5010597

AUTHOR: Gramenitskiy, P. M.; Savich, A. A.

TITLE: Results of an experimental analysis of decompression gas embolism

SOURCE: AN SSSR. Institut evolyutsionnoy fiziologii. Funktsii organizma v usloviyakh izmenennoy gazovoy sredy, v. 3, 1964, 43-52

TOPIC TAGS: aereobolism, decompression sickness, respiration, cardiovascular system

ABSTRACT: The author studied two groups of animals, rabbits and dogs. In the first experiments, rabbits were studied after decompression. Gas formation in the vasculature and tissues was visually studied, in both live and dead animals. In the second group of animals (dogs) the formation of gas was observed by means of gas traps and centrifuged blood. At the same time changes in respiration and cardiovascular activity of the dogs were observed. Visual observation of gas formation in the vasculature was studied in 22 rabbits weighing 2-3.5 kg. The animals were placed in a pressure chamber under pressures of 2.25-5 atm for 6 hr. Decompression

1/3

L 42196-65

ACCESSION NR: AT5010597

took place within either 10—15 sec or 50—60 sec. A number of animals were killed by electric shock immediately after exposure; others were anesthetized.

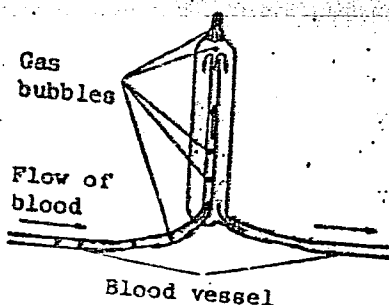


Fig. 1. Gas trap system

Studies using gas traps and centrifuged blood were conducted on 30 dogs. Fig. 1 shows a typical gas trap system. The results of the experiment showed that rabbits killed immediately after decompression from 6 hr exposure to 2.25 atm or higher exhibited gas formation, in both veins and arteries, in various parts of the body. Under the same conditions, gas formation was observed in isolated arterial preparations and resected arteries of live rabbits within 15 min of decompression.

When post-decompression gas formation took place in the venous blood of dogs, the appearance of gas bubbles in gas traps injected into the carotid artery was observed as a rule. This corresponded to increased arterial pressure and bradycardia. Air was not observed in the arterial

Card 2/3

L 42196-65

ACCESSION NR: AT5010597

blood of dogs into which air had been injected intravenously. When animals had been thoroughly supersaturated by nitrogen after exposure to 3.25 atm for 15 min and decompressed, conditions occurred for gas formations in arterial vasculature. However, since the flow of arterial blood was so fast, gas bubbles could not attain visible dimensions. These studies indicate that nitrogen diffuses slowly both in lungs and, evidently, in tissue. Orig. art. has 2 figures and 3 tables.

ASSOCIATION: none

SUBMITTED: 00

ENCE: 00

SUB CODE: PH, LS

NO REF SOV: 007

OTHER: 007

AND PRESS: 3240-F

noB
Card 3/3

L 42195-65 EWG(j)/EWG(r)/EWT(1)/FS(v)-3/EWG(v)/EWG(a)-2/EWG(c)
Pb-4/Pe-5 AFETC/AFMDC/AMD/APQC DD

ACCESSION NR: AT5010598

UR/3147/64/003/000/0053/0059

AUTHOR: Gramenitskiy, P. M.; Savich, A. A.; Yurova, K. S.

TITLE: The action of various intravenously injected gasses on the organism

SOURCE: AN SSSR. Institut evolyutsionnoy fiziologii. Funktsii organizma v usloviyakh izmenennoy gazovoy sredy, v. 3, 1964, 53-59

TOPIC TAGS: intravenous gas injection, aeroembolism, decompression sickness

ABSTRACT: The authors studied the effects of intravenously injected oxygen, carbon dioxide, nitrogen, and helium on 50 cats and 18 rabbits. Fifteen chronic experiments were conducted on rabbits. Acute experiments took place under hexenal anesthesia. A kymograph was used to record respiration and blood pressure in the left femoral artery. A canule was introduced into the right femoral vein for the injection of gases, and the rate at which gas could be injected into the vein was accurately regulated. In a number of acute experiments, animals breathed pure oxygen or helium-oxygen mixtures when gas was injected. In such cases tracheotomies were conducted and respiration took place by means of a small valve which was con-

Cord 1/3

L 42195-65

ACCESSION NR: AT5010598

ected to the tracheotomy tube. In 14 experiments a comparative analysis of the reaction of animals to the intravenous injection of gasses was conducted on animals with intact nervous systems and on animals with resected nervous systems. In all, there were 15 carbon dioxide, 4 oxygen, 20 air, and 10 oxygen-mixture injections. The rate at which gasses were injected depended upon the objective of the experiment. In chronic experiments, gasses were injected into the auricular vein of rabbits and their condition and behavior were then observed.

The experiments showed that changes in respiration and circulation produced by intravenous injection of various gasses were very close to changes in respiration and circulation observed during acute decompression experiments. This indicated that aeroembolism of the venous system and lung vasculature play a dominant role in decompression disruptions. It was also found that different gasses, injected intravenously, differed in their physiological effect. The physiological effect occurred when the gas was injected in the following order, helium, oxygen, and carbon dioxide had less effect on the organism. This can be explained by the fact that the diffusion of the gasses administered differed and that oxygen and carbon dioxide were

Card 2/3

L 42195-65

ACCESSION NR: AT5010598

already chemically associated with the organism. The consequences of artificial aeroembolism in its most severe stage depend upon the diffusion relationship which occurs in the lungs between aeroembolisms and mixtures which accumulate in alveolar areas. In the elimination of embolisms, the diffusion of gasses from lung capillaries in the leading role. These facts should be considered when analyzing compression disruptions or their treatment. The authors think that aeroembolism can serve as an experimental model for general compression disruptions. Orig. art. has 4 figures.

ASSOCIATION: none

INDEXED: 00

ENCL: 00

SUB CODE: PH, LS

NO REF SOV: 004

OTHER: 000

ATD PRESS: 3240-F

Card 3/3

42194-65 EWG(j)/EWG(r)/EWT(1)/FS(v)-3/EWG(v)/EWG(a)-2/EWG(c) Pb-4/
AFMTC/AFMDC/AMD/APGC D7

ATSO10599

UR/3140 '64 '003/000 '0062 '0066

ATTN: Gramenitskiy, P. M.; Yurova, K. S.

Training the organism for artificial aeroembolism

SOURCE: AN SSSR. Institut evolyutsionnoy fiziologii, Funktsii organizma v
raznoy sredy, v. 3, 1964, 60-66

TOPIC TAGS: aeroembolism, decompression sickness, decompression training

ABSTRACT: The purpose of this study was to determine whether it was possible to
train animals to aeroembolism by a method of systematic multiple
injections of air in doses which did not cause serious functional
disturbances. The idea that this regimen would be effective was based on the
assumption that this factor. Tests were conducted on 12 rabbits. Of this
number 10 served as controls. In all cases air was injected intravenously
in a dose of 1 ml per 15 sec. After injection the animals were placed on a
stand for 2 hr. The results of the experiments showed that
injections of air did not produce serious disturbances in the animals.
There was heavy panting and general inhibition of the animals, and some-

L 42194-65

ACCESSION NR: AT5010599

times paralysis of the rear extremities. Doses of 1.3 ml of air brought on extremely heavy panting and inhibition of activity which was even more pronounced than in the previous case. Almost all of the animals survived under these conditions. Doses of 1.5 ml of air usually produced convulsions and were fatal for the majority of the animals. Doses of 2.0 ml of air and greater were fatal in all cases. It should be noted that when known fatal doses of air were injected, almost all animals showed paralysis of the rear extremities; the front extremities were usually paralyzed, but not always. The experiment showed that multiple systematic injections of air, starting with relatively small doses, brought on an increase in the susceptibility of rabbits to the harmful effects of aeroembolism. After a series of injections of air in threshold doses (0.6 ml), rabbits were able to tolerate doses of 1.3, 1.5, and even 2.0 ml of air, doses which are standard fatal quantities of air.

In analyzing the data, the authors draw attention to the fact that intravenous injection of air always brought on paralysis of the hindquarters. Paralysis of the rear half of the body of animals is one of the typical manifestations of severe artificial aeroembolism. It is important to remember

L 42194-65
ACCESSION NR: AT5010599

that these very symptoms are also observed as a result of severe decompression disruptions. Symptoms of bends or paralysis of the hindquarters may be explained either in terms of gas formation or spinal anesthesia or the formation of gas bubbles in the intersegmental vasculature.

The authors conclude by proposing that future experiments should determine whether training for artificial aeroembolism would be useful in increasing resistance to decompression and whether animals after multiple decompressions showed increased resistance to the intravenous injection of gasses. The increased resistance of the organism to decompression is the perfection of protective reactions to aeroembolism. The art. has 3 figures and 2 tables.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: PH, LS

OTHER: 005

ALL PAGES: 3240-F

L 42193-65 EWG(j)/EWG(r)/ENT(1)/FS(v)-3/ENG(v)/ENG(a)-2/ENG(c) Pb-4/
Pe-5 AFMTC/AFMDC/AMD/APGC DD

ACCESSION NR: AT5010600

04/3147/64/003/000/0067/0071

AUTHOR: Gramenitakiy, P. M.; Savich, A. A.

TITLE: The role of hypoxemia in the development of decompression disruptions

SOURCE: AN SSSR. Institut evolyutsionnoy fiziologii. Funktsii organizma v
izmenennoy gazovoy srede, v. 3, 1964, 67-71

TOPIC TAGS: decompression sickness, aeroembolism, hypoxemia, hypercapnia

ABSTRACT: There has been a paucity of data on how gas transport in the blood is
affected during decompression disruption. Since this problem is of both
theoretical and practical interest, the authors studied the blood gas of ani-
mals exposed to increased pressure followed by decompression or artificial
asphyxiation.

Both acute and chronic experiments were conducted on male and female
animals weighing from 12 to 30 kg. In the chronic experiments, animals were
placed in a decompression chamber under pressures of 4.5 atm for 35, 40, 45, and 50 min. Following
Card 1/3

L 42193-65

ACCESSION NR: AT5010600

exposure to these increased pressures decompression took place at a rate of 10 m/min. Arterial blood was taken by puncture from the femoral artery of the animals while in the water. In the acute experiments, the animals were anesthetized after tracheotomy were placed in a pressure chamber and exposed to pressures of 5.0 and 7.0 atm for periods sufficient to produce significant decompression disorders after rapid decompression. When decompression at a rate of 10 m/min had taken place, respiratory movements were registered on a kymograph. An analysis of blood pressure and arterial blood was also conducted. In a number of tests, gas formation in the blood was conducted by means of gas traps introduced by the authors. In all, 14 chronic and 6 acute experiments were conducted.

The results showed that the development of acute forms of decompression disorders are also accompanied by extreme hypoxemia and hypoxemia. Lowered oxygen content in the arterial blood of animals exposed to threshold levels of increased pressure is significant even when typical decompression symptoms are lacking. Hypoxemia and hypercapnia always

L 42193-65

ACCESSION NR: AT5010600

follow aeroembolisms which occur in capillaries. Changes in the gas composition of arterial blood with respect to oxygen and carbon dioxide are factors in the reaction of the organism to decompression. This report has 1 figure and 1 table.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: PH, LS

NO REF SOV: 002

OTRER: 003

ATD PRESS: 3240-F

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Card 3/3

L 42198-65 EWG(j)/EWG(r)/EWT(1)/FS(v)-3/EWG(v)/EWG(a)-2/EWG(c) Pb-4/
Pe-5 AFMDC/AFMDC/AMD/APGC DD

ACCESSION NR: AT5010602

UR/3147/64/003/000/0079/0086

AUTHOR: Arsen'yeva, V. I.; Gramenitskiy, P. M.; Yurova, K. S.

TITLE: Comparative characteristics of the circulatory and respiratory reactions of anesthetized dogs to decompression and artificial aeroembolism

SOURCE: AN SSSR. Institut evolyutsionnoy fiziologii. Funktsii organizma v usloviyakh izmenennoy gazovoy sredy, v. 3, 1964, 79-86

TOPIC TAGS: aeroembolism, respiration, circulation, decompression sickness, bends

ABSTRACT: The first objective of the experiment was to study the respiratory and cardiovascular reaction of the organism to decompression and artificial aeroembolism in chronic experiments. The second objective was to elucidate whether training for artificial aeroembolism was effective in increasing the resistance of the organism to decompression. That is, whether increasing the resistance of the organism to decompression increased its resistance to intravenous injection of gases. Experiments were performed on three dogs trained to lie on one side in a special frame and breathe through a mask. An MPO-2 oscillograph was used to

L 42198-65.

SESSION NR: AT5010602

record respiration and pulse. At the same time, gas counters registered the volume of lung ventilation. All these indices were recorded following exposure to decompression from pressures of 4.5 atm. (exposure 15—16 min), or to intravenous injection of air in quantities of 20—15 ml in the course of 1—2 min. Fig. 1 shows the system used to inject air into the experimental dogs.

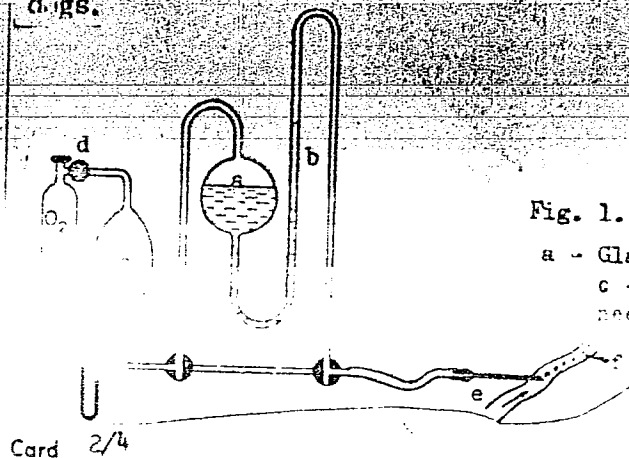


Fig. 1. System for intravenous air injection

a - Glass sphere; b - graduated burette;
c - LAM-48; d - reducer; e - injection
needle; f - vein.

I 42198-65

ACCESSION NR: AT5010602

The dogs were exposed to decompression, and when typical symptoms of bends occurred (paralysis of the rear limbs), the indices described in the text were recorded for 3—5 min; the animals were then given therapeutic recompression. In all, 187 tests were conducted with decompression of intravenously injected gasses.

Changes in respiration and cardiac activity of unanesthetized dogs during decompression and artificial aeroembolism were essentially similar. Training the organism for artificial aeroembolism increases the resistance to decompression disruptions; training for decompression disruptions increases the resistance of the organism to artificial aeroembolism. Increasing the resistance of the organism to decompression in experiments is based primarily on conditioning the reaction of the respiratory and cardiovascular systems to aeroembolisms. The authors feel that the reaction of the organism to decompression and artificial aeroembolism is conditioned by the fact that deleterious functional shifts are eliminated and protective functional shifts developed. It is also suggested that these protective reactions develop more rapidly than gas bubbles form in the blood. Orig. art. has 7 figures.

L 42191-65 EWG(j)/EWG(r)/EWT(1)/FS(r)-3/EWG(r)/EWG(a)-2/EWG(c) Pe-5 AFMTC/AFMDC/AMD/APGC DD

Pb-4/

ACCESSION NR: AT5010604

UR/3147/64/003/000/0091/0105

AUTHOR: Gramenitskiy, P. M.; Sorokin, P. A.

TITLE: Mechanism of changes in respiration and circulation in dogs exposed to oxygen under high pressure

SOURCE: AN SSSR. Institut evolyutsionnoy fiziologii. Funktsii organizma v usloviyakh izmenennoy gazovoy sredy, v. 3, 1964, 91-105

TOPIC TAGS: oxygen poisoning, high pressure respiration, circulation pressure chamber, oxygen

ABSTRACT: The authors studied 17 dogs weighing 12—17 kg under urethane anesthesia administered in a 2/3 dose before and a 1/3 dose after fixation on a table. The average dose of administered urethane was 1.2 g/kg. In cases where respiration was accelerated, morphine was administered. Heparin was also given to prevent coagulation in the blood-pressure monitoring device. After anesthesia, tracheotomy was performed and a canule was introduced into the femoral artery to measure arterial pressure. The prepared animals were placed in a pressure chamber containing a kymograph for recording respiration, lung ventilation, and blood pressure.

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EKG's were also recorded at various intervals throughout the experiments. The pressure in the chamber was maintained at 6 atm (except for the 3 control tests) and the dogs breathed nearly pure oxygen under these conditions. The experimental conditions varied according to the type of procedure.

A total of 26 tests were conducted. In 7 tests, animals with intact nervous systems were exposed to high oxygen pressures. In 11 tests, animals underwent vagotomy, resection of the subclavian loop, or complete splanchnic denervation prior to the action of oxygen or at various periods during the poisoning. In 8 tests, the splanchnic nerves were resected and the vagus nerve was ligatured. In all tests, the animals were observed for the symptoms of oxygen poisoning.

The experiments revealed that the course of oxygen poisoning in anesthetized dogs could be divided into 4 periods. The first period was characterized by decreases in lung ventilation and cardiac activity and was adaptive in nature. The vagus nerve played the basic role in these protective reactions. The second, preconvulsive period was characterized by hyperventilation, tachycardia, and increased arterial pressure which re-

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flected the participation of the adrenosympathetic system. These reactions were deleterious, since they accelerated the onset of oxygen poisoning. In the first period, convulsions took place. This period was characterized by a gradual decrease in cardiac rhythm which became tachycardia as soon as convulsions occurred. At the end of this period there was a parasympathetic effect with a background of respiratory inhibition which led to bradycardia, nodal rhythm, or cardiac block. These disruptions of cardiac rhythm were reversible and could be eliminated by vagotomy. The fourth period was characterized by a sharp increase in blood pressure and accelerated cardiac activity (sinus tachycardia). When respiration had ceased, arterial pressure fell but cardiac activity persisted. At the end of this period bradycardia and cardiac block occurred which could not be eliminated by vagotomy. It was found that preliminary resection of vagus nerves eliminated the decrease in cardiac activity during the first three periods of oxygen poisoning and therefore hastened the onset of convulsions and shortened the survival period of the animals. Preliminary ligature of the adrenals increased the survival time of dogs exposed to 6 atm oxygen and inhibited the development of convulsions. A similar but more pronounced effect was produced when splanchnic nerves were also eliminated. This effect can be explained

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as a function of the removal of the adrenosympathetic system and the consequent increased blood deposition and, in connection with this factor, decreased blood supply to tissues as well as lowered blood pressure. The authors also note the isolation and disruption of splanchnic nerves and the sympathetic nerves, those protective parasympathetic reactions noted in the cardiac activity of intact animals did not occur, in spite of the preservation of vagus nerves.

The authors conclude by commenting on the role of the adrenosympathetic system in reactions to high oxygen pressures. On one hand the system must play a significant role in toxic manifestations of high-pressure oxygen. On the other hand parasympathetic cardiovascular protective reactions. On the other hand, the system must participate in the protective reactions. Orig. art. has 6 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: LS, PH

NO REF SOV: 011

OTHER: 009

ATD PRESS: 3240-F

Card 4/4, P02

ACC NR: AT6036540

SOURCE CODE: UR/0000/66/000/000/0134/0135

AUTHOR: Gramenitskiy, P. M.

ORG: none

TITLE: Compensatory reactions of the organism occurring during the development of decompression sickness [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 134-135

TOPIC TAGS: aeroembolism, decompression sickness, hypoxemia

ABSTRACT: Protective compensatory reactions of the organism to the formation of free gas bubbles in the internal environment were studied in a series of experiments.

Changes in the respiration and circulation of dogs, cats, and rabbits during the development of decompression sickness of varying severity were studied in acute experiments and correlated with the incidence of gas bubble formation in the blood and changes in the gas composition of the blood. The principal method used to simulate decompression aeroembolism was intravenous injection of various gases. The respiratory reactions of the cardiovascular system and shifts in the gas composition of the blood

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ACC NR: AT6036540

of dogs and rabbits during decompression and artificial aeroembolism were correlated in chronic experiments with changes in the general state of the organism and the development of specific decompression symptoms. The effect of multiple exposures on tolerance of these effects was also studied.

The main factor in the development of decompression sickness was found to be aeroembolism of the venous component of systemic circulation and the pulmonary vessels. It was also found that the organism has powerful physiological protective mechanisms against such unusual threats as the formation of gas bubbles in the blood due to rapid decompression. The arterial hypoxemia which always accompanies these phenomena plays an important part in the development of compensatory and protective respiratory and circulatory reactions to decompression and artificial aeroembolism. It is concluded that the organism can be trained to resist both decompression and artificial aeroembolism, increased resistance to which is cross-adaptive in nature. [W.A. No. 22; ATD Report 66-116]

SUB CODE: 06 / SUBM DATE: 00May66

Card 2/2

GRAMENITSKIY, V.A.

Nature of clinical course of cruceellosis. Klin. med., Moskva
30 no. 5:35-43 May 1952. (CLML 22:3)

1. Leningrad.

GRAMENITSKIY, V.N.

Instrument for the precise measurement of pressure within the range
of 0 to 3 KG/cm². Stan.1 instr. 25 no.3:16-17 Mr '54. (MLRA 7:5)
(Pressure gauges)

GRAMENITSKIY, V.N., inzhener

A second-category stationary hydraulic dynamometer model with measuring limits between 1 and 50 tons. Ism. tekhn. no.2:12-18 Mr-Ap '55. (MLRA 8:9)

1. Moskovskiy gosudarstvennyy institut mer i izmeritel'nykh priborov
(Hydraulic machinery) (Dynamometer)

GRAMENITSKIY, V.N., Cand Tech Sci -- (diss) " The principle of ^{the}
balanced piston in pressure-measurement instruments." Mos, 1958. 12 pp
Committee of Standards, Measures, and Measuring Instruments ^{under} the Council
of Ministers USSR. All-Union Sci Res Inst of Metrology in D.I. Mende-
leyev), 150 copies (KL, 24-58, 119)

GRAMENITSKIY, V.N.

24(0): 5(4); 6(2) PHASE I BOOK EXPLOITATION SOV/2215

Vsesoyunnyy nauchno-issledovatel'skiy institut metrologii imeni D.I. Mendeleeva

Referaty nauchno-issledovatel'skikh rabot; sbornik No. 2 (Scientific Research Abstracts; Collection of Articles, Nr 2) Moscow, Standartgiz, 1958. 139 p. 1,000 copies printed.

Additional Sponsoring Agency: USSR, Komitet standartov, mer i izmeritel'nykh priborov.

Ed.: S. V. Reshetina; Tech. Ed.: M. A. Kondrat'yeva.

FUNPQSR: These reports are intended for scientists, researchers, and engineers engaged in developing standards, measures, and gages for the various industries.

COVERPAGE: The volume contains 128 reports on standards of measurement and control. The reports were prepared by scientists of institutes of the Komitet standartov, mer i izmeritel'nykh priborov pri Sovete Ministrov SSSR (Commission on Standards, Measures, and Measuring Instruments under the USSR Council of Ministers). The participating institutes are: VNIIM - Vsesoyunnyy nauchno-issledovatel'skiy metrologii imeni D.I. Mendeleeva (All-Union Scientific Research Institute of Metrology imeni D.I. Mendeleeva), in Leningrad; Sverdlovsk branch of this institute; VNIIM, in Leningrad; Sverdlovsk branch of Institut Komiteta standartov, mer i izmeritel'nykh priborov (All-Union Scientific Research Institute of Standards, Measures, and Measuring Instruments) located from VNIIM - Moskovskiy gosudarstvennyy institut mer i izmeritel'nykh priborov (Moscow State Institute of Measures and Measuring Instruments) October 1, 1955; VNIIM - Vsesoyunnyy nauchno-issledovatel'skiy institut fiziko-tekhnicheskikh issledovaniy (All-Union Scientific Research Institute of Physico-technical and Radio-engineering Measurements) in Moscow; Kharkovskiy gosudarstvennyy institut mer i izmeritel'nykh priborov (Kharkov State Institute of Measures and Measuring Instruments) and VNIIM - Novosibirskiy gosudarstvennyy institut mer i izmeritel'nykh priborov (Novosibirsk State Institute of Measures and Measuring Instruments). No personalities are mentioned. There are no references.

Chinabaz, A.I., and O.A. Gollidshchikova (VNIIM); G.A. Cherkasov, V.V. Gorodetskii, and A.S. Shumakov (VNIIM); G.A. Cherkasov, V.V. Gorodetskii, and A.S. Shumakov (VNIIM). Studying the Reasons for Variations of Readings of Car Scales

Zhukovskiy, M.K., and V.V. Ormanitskiy (VNIIM). Standard Hydraulic Stationary Dynamometers of the Second Class for the 5 and 50 ton Ranges

Boyl, E. Ya. (VNIIM) Assembly and Alignment of Stationary Dynamometers for Tension and Compression Tests to 10,000 and 100,000 Kgf

Savitskiy, P.S., B.A. Bandyshchey, and V.V. Skobelin (Sverdlovsk Branch of VNIIM). Effect of Rigidity of the Dynamometer of Testing Machines on the Falling Portion of the Extension Diagram

G R A M E N I T S K I Y , U . N .

24(0); 5(2); 6(2) PHASE I BOOK EXPLOITATION SOV/2215
Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii i
D.L. Mendeleeva
Referatsy nauchno-issledovatel'skikh robot; sbornik No. 2 (Scientific
Research Abstracts; Collection of articles, No. 2) Moscow,
Standartgiz, 1958. 139 p. 1,000 copies printed.
Additional Sponsoring Agency: USSR, Komitet standartov, mer i
izmeritel'nykh priborov.
Ed.: S. V. Reshetina; Tech. Ed.: M. A. Kondrat'yeva.
PURPOSE: These reports are intended for scientists, researchers,
and engineers engaged in developing standards, measures, and
scales for the various industries.
COVERAGES: The volume contains 128 reports on standards of measure-
ments and control. The reports were prepared by scientists of
institutes of the Komitet standartov, mer i izmeritel'nykh
priborov pri Sovetskom Ministre SSSR (Commission on Standards,
Measures, and Measuring Instruments under the USSR Council of
Ministers). The participating institutes are: VNIIM -
Vsesoyuznyy nauchno-issledovatel'skiy metrologi i
Mendeleyeva (All-Union Scientific Research Institute of Me-
trology i D.L. Mendeleev) in Leningrad; Sverdlovsk branch
of this Institute; VNIK - Vsesoyuznyy nauchno-issledovatel'skiy
institut standartov, mer i izmeritel'nykh priborov
(All-Union Scientific Research Institute of the Commission
on Standards, Measures, and Measuring Instruments), created
from VNIIM, Moskovskiy (Moscow) State Institute of
Izmeritel'nykh priborov (Measuring Instruments), created
and Measuring Instruments) October 1, 1955. VNIIM
Vsesoyuznyy nauchno-issledovatel'skiy institut fiziko-tekhnich-
eskikh i radiotekhnicheskikh izmereniy (All-Union Scientific
Research Institute of Physicotechnical and Radio-engineering
Measurements) in Moscow; KhGIMIP - Kharkovskiy gosudarstvennyy
institut mer i izmeritel'nykh priborov (Kharkov State Institute
of Measures and Measuring Instruments); and NGIMIP - Novosil-
skiy gosudarstvennyy institut mer i izmeritel'nykh priborov
(Novosil State Institute of Measures and Measuring Instru-
ments). No personalities are mentioned. There are no references.
Branch of VNIIM. Effect of Rigidity of the Dynamometer of
Testing Machines on the Falling Portion of the Extension Diagram 60
Verbitskiy, B.A., and P.S. Savitskiy (Sverdlovsk Branch of VNIIM). 61
Determining Yield Points Without Using a Test Piece
Fayazov, S.P., S.A. Smolich, L.V. Beloruchev, and I.M. Tsvetich
(VNIIM). Developing a Method for the Determination of Yield
Points and Uniform Elongation Without Tensile Tests (the two-
step method)
Pressure Measurements (Dolinskii, Ye.P., Editor, Candidate of Tech-
nical Sciences)
Izvestiya E. V.N. (NGIMIP). Pressure Gage for Accurate Measuring
in the Range 0.01 to 4 Kilograms per Square Centimeter 63
Doroshina, E.P. (Sverdlovsk Branch of VNIIM). Studying Pressure
Measurement Errors by Means of a Depression Meter of the Komarov-
type 64
Unit 13/54

GRAMENITSKIY, V.N.

Eliminating the error of weight-piston scales caused by outflow
of liquid through gaps. Izv.tekh. no.9:13-15 S '60.

(MIRA 13:9)

(Scales (Weighing instruments))

GRAMENITSKIY, V.N.

Standard manometric instruments with a balanced piston. Trudy VNIIT
no.4:111-150 '64. (MIRA 13:12)

(Manometer)

GRAMENITSKIY, V.N.; FROLOV, Yu.A.; KHANSUVAROV, K.I.

Grade 0,02 standard manometer with measurement limits from
0 to 2,5 kgf/cm². Izm.tekh. no.19:19-20 N '61.

(MIRA 14:11)

(Manometer)

L 10722-61 EWT(1)/BDS/ES(w)-2 AEDC/AFPTC/ASD/SSD Pab-4
 ACCESSION NR: AT3002050 S/2589/62/000/066/0014/0026

AUTHOR: Gramenitskiy, V. N.; Khansuvarov, K. I. 62
 61

TITLE: Calibrating double-piston pressure-vacuum gauge 21

SOURCE: USSR. Komitet standartov, mer, i izmeritel'nykh priborov. Trudy* institutov Komiteta, no. 66 (126), 1962. Issledovaniya v oblasti izmereniy davleniya, raskhoda i vakuuma, 14-26

TOPIC TAGS: MVP-2.5 vacuum pressure gauge, double pistons, pressure, measuring error, standard spring pressure gauges, standard spring vacuum meters

ABSTRACT: A description and schematic diagram of the MVP-2.5⁸ vacuum pressure gauge¹⁰ is given. The double-piston devices are used to measure excess, absolute, and atmospheric pressure, as well as vacuum and pressure differentials. Measurement limits were found to be from 0 to 2.5 kg/cm sup 2 for excess pressure and from 0 to 7.60 mm of mercury for vacuum. Measuring error limit was found to be less than 0.05%, if the measured size is more than 0.1 kg/cm sup 2, and less than 0.5 mm of water for values less than 0.1 kg/cm sup 2. These instruments can be used to verify standard spring pressure gauges and standard spring vacuum meters. Orig. art. has: 32 equations and 5 figures.

Card 1/1

Qss. VNIITK

GRAMENITSKIY, V.N.; KHAMISUVANOV, K.I.

Using the principle of unsealed piston in precision
measuring instruments. Izv. tekhn. no. 4:32-38 Ap '64.
(MIRA 17:7)

GRAMENITSKIY, Ya. N.

USSR/ Miscellaneous - Pressure Measurement

Card : 1/1

Authors : Gramenitskiy, J. N.

Title : An instrument for precise pressure measurement within the limits of 0 and 3 kg/cm².

Periodical : Stan i instr., 3, 16 - 17, Mar 1954

Abstract : A pressure-measuring instrument (liquid manometer type, kerosene being used for the liquid) is described and illustrated. Diagrams; table.

Institution :

Submitted :

GRAMENITSKIY, Ye M.

B

USSR / General Biology. General Histology.

Abs Jour: Ref Zhur-Biol., No 23, 1958, 103261.

Author : Gramenitskiy, Ye. M.

Inst : NOT given.

Title : Change in Intravital Staining of Cells of Cold-Blooded Animals under the Influence of Lead Nitrate.

Orig Pub: Byul. eksperimen. biol. i med., 1958, 45, No 1, 96-99.

Abstract: A 1% aqueous solution of neutral red was injected into male autumn and winter frogs calculating 0.3-0.5 mg of stain per gram of weight; the injection was made into the body cavity. The experimental frogs were simultaneously injected in the spinal lymphatic sac with an aqueous solution of $Pb(NO_3)_2$ in a quantity of 1-10 mg/g of weight. After an hour, the animals were sacrificed. Brain tissue,

Card 1/3

GRAMENITSKIY, Ye.M.

Seasonal changes in the protein and ribonucleic acid content of
liver cells in frogs. Zhur.ob.biol. 23 no.4:311-313 J1-Ag '62.
(MIRA 15:9)

1. Sanitary Hygienic Medical Institute, Leningrad.
(PROTEIN METABOLISM) (NUCLEIC ACIDS) (LIVER)

GRAMENITSKIY, Yevgeniy Mikhaylovich; MAKAROV, P.V., red.; ONOSHKO,
N.G., tekhn. red.

[Vital staining of cells and tissues under normal conditions
and in pathology] Prizhiznennaya okraska kletok i tkanei v
norme i patologii. Leningrad, Medgiz, 1963. 149 p.
(MIRA 16:10)

(STAINS AND STAINING (MICROSCOPY))

GRAMENITSKIY, Ye.M. (Leningrad, K-9), ulitsa Lebedeva, 21, kv.4)

Cytochemical changes in nerve and liver cells of white rats in hyperthermia. Arkh. anat., gist. i embr. 44 no.6:54-61 Je '63.
(MIRA 17:7)

1. Kafedra obshchey biologii (zav. - prof. P.V. Makarov)
Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.

GRAMENITSKIY, Ye.N.

Significance of the Eh-pH diagram for the explanation of the paragenesis of alkali pyroxenes and amphiboles in ferruginous quartzites. Soob. DVFAN SSSR no.19:35-38 '63. (MIRA 17:9)

1. Dal'nevostochnyy geologicheskii institut dal'nevostochnogo filiala Sibirskogo otdeleniya AN SSSR.

MATOUSEK, Vladimir, inz.; GRAMETBAUER, Petr, inz.

Use of activated silicate for increasing filler retention.
Papír a celulósa 18 no. 6: 113-117 Je '63.

1. Podnikovy výzkum Jihočeských papíren, pracoviště Větřní.

BRUTMAN, B.N.; GRAMM, I.N.

Horizontal borehole cutting machine for pipelines. Rats. i izobr.
predl. v stroi. no.56:28-34 '53. (MIRA 9:7)
(Pipelines) (Boring machinery)

GRAMM, I. N. inzhener

Operation of the eccentric boring machine. Mekh. stroi. 14 no.2:21-25
F '57. (MLBA 10:4)

(Boring machinery)

(Pipelines)

GRAMM, I.N., inzh.

Trenchless laying of pipes. Biul. stroi. tekhn. 15 no.5:16-17 My
'58. (MIRA 11:6)

1. Trest Zaporozhstroy.
(Pipelines)

GRAMM, I.N., inzh.; GORCHAKOV, S.N., inzh.

Unit of the Zaporozhstroy Trust for trenchless laying of pipes.
Mont. 1 spets. rab. v. stroi. 22 no. 12:11-13 D '60. (MIRA 13:11)

1. Trest Zaporozhstroy.
(Pipelines)

GRAMM, I.N.; KASITSYNA, K.N., inzh., red.

["Zaporozh'ye 800" installation for trenchless pipe laying using the horizontal drilling method; work practice of the Zaporozh'ye Construction Trust of the Order of Lenin] Ustanovka "Zaporozh'e-800 dlia bestransheinoi prokladki trub metodom gorizonta'l'nogo bureniia; iz opyta ordena Lenina tresta "Zaporozhstroy." Moskva, Gosstroizdat, 1962. 27 p.

(MIRA 17:7)

1. Akademiya stroitel'stva i arkhitektury SSSR. Nauchno-issledovatel'skiy institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu. 2. Starshiy inzhener otdela glavnogo mekhanika tresta opyta Lenina "Zaporozhstroy" (for Gramm).

GRAMM, M. N.

PA 62T60

USSR/Geology
Stratification

Apr 1948

"Discovery of *Platygena Asiatica* Rom. in the South
Tadzhik Depression," M. N. Gramm, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 2

Describes two cross sections of soil stratigraphy ob-
tained from area some 17 km to the northwest of the
regional center Bal'dzhuan. Subject fossils discov-
ered in the course of the studies. Submitted by Acad-
emician D. V. Nalivkin, 6 Feb 1948.

62T60

1. GRAMM, N. K.; OSIPOVA, G. A.
2. USSR (600)
4. Paleobotany - Tertiary
7. Discovery of plant remains in the Tertiary continental deposit of southern Uzbekistan., Dokl. AN SSSR, 81, No. 6, 1951.
Recd. 19 March 1951

9a. Monthly List of Russian Accessions, Library of Congress, May 1952.
UNCLASSIFIED.

GRAMM, M. N., VASYUTINSKAYA, A. B., KVANINA, L. I., MANZHIROVA, G. A., SVESHNIKOV, P.M.,
TOLOKONNIKOV, V. V., FOMIN, V. M.

"Akchagyl Deposits in the Lower Reaches of the Amu-Darya"
Dokl. Uz. SSR, 1953, No 12, 18-21, (Uzbekistan resume)

In 1952 in the lower reaches of the Amu-Darya during columnar drilling in a number of wells the drillers uncovered sandstone-clay deposits of the Akchagyl age with thicknesses up to several dozen meters. These deposits lie on an eroded surface of the Paleogene and are superimposed by ancient delta sedimentary deposits of the Anthropogene. The character of the ostracod fauna testifies to the strong fresh-water nature of Akchagyl gulf. (RZhGeol, No 3, 1954)

SO: W-31187, 8 Mar 55

GRAMM, M. N.

Cross section of the Neogene deposits in the northeastern regions of
the Mynbulak Basin (Kyzyl-Kum). Dokl. AN SSSR 103 no. 4: 677-680 Ag '55.
(Kyzyl-Kum--Geology, Stratigraphic) (MLRA 8:11)

GRAMM, M.N.

Stages in the development of the Minbulakskaya depression. Izv. AN Uz.
SSR. Ser. geol. no.2:59-63 '57. (MIRA 11:9)
(Kysyl-Kum—Geology)

GRAMM, M.N.; KHAYRULLIN, B.G.

Composition of Apsheron Ostracoda from the Sarykamysh Depression.
Uzb.geol.zhur. no.2:89-91 '58. (MIRA 12:2)

1. Institut geologii AN UzSSR i Uzbekskoye geologicheskoye
upravleniye.
(Sarykamysh Depression--Ostracoda, Fossil)

PRIKHID'KO, P.L.; GRAMM, M.N.

New data on the chemical composition of salts from the salt-bearing series in the northwestern Fergana Valley. Uzb.geol.zhur. no.6:63-70 '58. (MIRA 12:4)

1. Institut geologii AN UzSSR.
(Fergana--Salts)

GRAMM, M.N.; KARGIN, I.Ye.

Strata containing *Cytherissa cascosa* Mandelstam in litt. in the Karakul' region. Dekl. AN Uz.SSR no.7:15-17 '58. (MIRA 11:10)

1. Institut geologii AN UzSSR i Uzbekskaya gidrogeologicheskaya ekspeditsiya. Predstavleno chelnom-korrespondentom UzSSR N.L. Korshenevskim.

(Karakul' region--Ostracoda, Fossil)